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NUTRITION REVIEWS

VOL. 13 DECEMBER 1955 No. 12

HUMAN LIFE STUDIES

In a thought-provoking consideration of biologic growth as it may affect pupils' success, W. M. Krogman (*Merrill Palmer Quarterly* **1,** *90 (1955)*) emphasizes the importance of a sound *developing* mind in a sound *growing* body. Although he recognizes that biologic growth, including all of the morphologic and physiologic changes in the first two decades of life, is not necessarily basic in the development of psychosocial behavior, he considers it to be a conditioning factor and perhaps a determining factor.

Physical, mental and social development of the infant and child cannot follow a normal course without provision of a full measure of "man's first need," food that is adequate in quality and quantity to meet the biologic growth needs. These factors probably condition the productiveness and social development of individuals throughout the entire life cycle. Indeed, it has been emphasized that if patterns of food consumption are to be adequate for purposes of health and psychosocial well-being, concerted efforts are required in nutrition education, food technology, and in the production of foods with maximum potential in public service. The challenges and opportunities to link interdisciplinary research in physiologic growth and function, psychologic behavior, socioeconomic adjustment and intellectual attainment with human life practices are many.

Investigators at the level of modern chemistry and physics are trying to describe in terms of atoms and molecules what lies behind the appearance, function, growth and development of the body. Simultaneously specialists in the many departmentalized phases of the science of man are equally active. The cytologist is investigating the composition and behavior of cells; the histologist is inquiring into the properties of tissues; the anatomist and physiologist are dealing with the structure, function and development of the body; the geneticist and nutritionist are concerned with the health of one generation to succeeding ones. The march of science on all its fronts including human life studies is opening new vistas, the like of which few have dreamed.

Information about man's relations with his environment is meager indeed. The little that is known seems to be scattered and in many cases unrelated because some phases of environment will be readily studied from physiologic and morphologic points of view, others from an ecologic, psychologic, anthropologic, socioeconomic, or some other point of view. As a matter of fact, nature's well-laid plan of heredity in man may fall short of its goal and be altered by strategic environmental imbalances and deficiencies at the time of conception and by subsequent disruptions occurring from time to time in the course of living during any stage of the life cycle. It has been said, "Man is a whole with his environment—man is a part of the environment in which he lives and outside of which he cannot exist." In fact there is growing recognition that the subject man is divisible only as a matter of arbitrary convenience, but his origins, present circumstances and destiny form a single pattern that cannot be broken into pieces that are separately fully understandable.

It is recognized that innumerable genetic, environmental, anthropologic, psychologic and socioeconomic factors may enhance, dwarf, or retard biologic growth and function upon which progress in human growth, form and function depend. Within the twentieth century Research Centers for the study of Human Growth and Development for collecting *life records* have been established. Human life studies are basic to the

understanding of *disease records* which have too long been the major concern of scientists. Investigators from many fields of interest may now pool their talents and time to investigations of man of a broader scope and thereby contribute understanding and piece out the single pattern of man. We must continue to seek wisdom on the far-reaching effects of external and internal environment, of disease, injury and other circumstances that may arise to the extent of altering biologic growth and thereby affect successful performance and function of the individual cells, organs, tissues and organism as a whole.

Human Life Studies may not have the exactness of chemistry and physics; nevertheless they can be organized and so conducted on a fundamental basis to permit the accumulation of essential types of data from different disciplines of equal value in pulling together the fragments for describing more fully the characteristics in the single pattern of human growth and development. One of the greatest difficulties in studying infancy and childhood, however, is the fact that *no observations* can be repeated under exactly the same conditions. The continuous interplay of specific agents, of endogenous and exogenous environmental factors of human variability and susceptibilities, and of change coincident with physiologic aging precludes ever duplicating any observation under exact conditions. The history of evolution of life reveals a systematic increase in structural and functional dissymetries. In studies of biologic growth it may be more profitable to employ the multidisciplinary approach to the life pattern as a whole and view it not statistically (*i.e.*, by immobilizing it or including one popular phase of interest), but dynamically (*i.e.*, by bearing in mind the fact that it is a succession of constant transformations which may be influenced by environmental and other factors). Both approaches, however, contribute to the sum total of knowledge in describing the human life pattern.

As the science of nutrition evolved, growth in size of the body became one of the criteria for judging nutrition. As a result of their close relationship, the terms growth and nutrition are often used synonymously, although this may not always be a correct usage. The science of nutrition and the science of child development have emerged simultaneously and are products of the twentieth century. In this country they sprang from the awareness of a need for improving the health of the nation through development of preventive public health measures, improved food production and consumption, through better agricultural practices on the farm, and in food handling and services in the home, and more adequate distribution of food.

The Society for Research in Child Development, the first organization devoted exclusively to scientific investigation of basic facts and principles in conservation and improvement of child life, was founded in 1919 (D. McLean, *Child Develop.* **25,** *3 (1954)*). It emerged from the National Research Council through its Division of Anthropology and Psychology. In May 1930 President Hoover called the White House Conference for Child Health and Protection, and after months of fact-finding, the formal report revealed that a large number of children in the United States were handicapped by physical and mental unfitness and that many of the stamps of inferiority being placed on children were preventable if the newer knowledge of science were applied. In rapid succession the Conference on Children in a Democracy was called in 1939, and the Food and Nutrition Board of the National Research Council was established in 1940. Simultaneously the Division of Anthropology and Psychology set up a committee on dietary habits. The National Nutrition Conference for Defense in 1941 resulted in the establishment of a sound basis

for a national nutrition program and a welding together of all those disciplines concerned with biologic growth.

The future abounds in opportunities for human life studies—literally from the beginning of life. The application of modern scientific knowledge will build a better and stronger race, with greater average resistance to disease, greater average length of life and greater average mental power. Those who would study aging might seize upon the opportunities to join forces prevailing in the Child Development Institutes and continue to expand the scientific facts concerned with human biologic growth and development and project current studies ahead.

Icie Macy Hoobler
Merrill-Palmer School
71 East Ferry Avenue
Detroit 2, Michigan

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The publication of NUTRITION REVIEWS has been undertaken to enable professionally trained people to keep abreast of current progress and to have available an unbiased, authoritative review of the current research literature in the science of nutrition.

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